REMARKS

Applicant respectfully requests reconsideration of the application in view of the following amendments and arguments.

Summary of Office Action

Claims 1-14 were pending.

Claims 11-14 were withdrawn from consideration.

Claims 1, 4 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,226,331 of Gambuzza.("Gambuzza").

Claim 6 is rejected under 35 U.S.C. § 103 as being unpatentable over Gambuzza.

Claims 2, 3 were rejected under 35 U.S.C. § 103 as being unpatentable over Gambuzza in view of U.S. Patent No. 6,295,343 of Hjartarson ("Hjartarson").

Claims 5, 9, and 10 were objected to.

Claims 7, 8 were indicated as being allowable.

Summary of Amendments

Claim 1 was amended. Support for the amendment to claim 1 may be found in the specification at pages 3, 9-11, original claim 5, and Figure 3. Applicant respectfully submits that the amendment to claim 1 does not add new matter.

Response to claim objections

Claims 5, 9, and 10 were objected to as being dependent upon a rejected base claim "but would be allowable if rewritten in independent form". (03/22/2004 Office Action, p. 2).

With respect to the objection to claim 5, applicant believes that the amendment to claim 1 has placed claim 1 in condition for allowance as discussed below with respect to the 35 U.S.C. § 102 rejections. Accordingly, applicant submits that the objection to claim 5 has been overcome.

With respect to claims 9-10, applicant respectfully submits claims 9 and 10 depend from independent claim 7 which the Examiner has already indicated was allowable. Applicant is unable to reconcile the Examiner's objection with the Examiner's indicated allowability of claim 7. Given that claim 7 is allowable and claims 8-10 depend from claim 7, applicant respectfully submits that claims 8-10 are likewise allowable. Thus no re-writing of claims 9-10 should be necessary. Applicant submits the objections to claims 9-10 has been overcome.

Applicant respectfully submits that the claim objections have been overcome.

Response to 35 U.S.C. § 102 rejections

Claims 1 and 4 were rejected as being anticipated by Gambuzza. As indicated above, claim 1 has been amended. Applicant respectfully submits *Gambuzza does not teach or disclose the claimed transmit block, hybrid network, and receive block residing within the same integrated circuit package, wherein the transmit block digitally filters the upstream data signal.*

The Examiner cited Gambuzza col. 3, lines 19-20 and Figure 4 as support for the transmit block, hybrid network, and receive block components residing within the same integrated circuit package. Applicant believes this citation may be a clerical error. Applicant notes that col. 3, lines 19-20 provide no support for the Examiner's assertion. Applicant found some support for *forming isolation capacitors* on "the same as the silicon chip or chips containing one or more other components of the interface device or a separate piece of silicon that is then included in an IC package with the other components" at col. 8, lines 1-7. Applicant notes that this is somewhat vague as to which components would actually be within the same integrated circuit package, thus Gambuzza would not anticipate claim 1 under 35 U.S.C. § 102.

Even if we assume *arguendo* that Gambuzza's components resided within the same integrated circuit package, applicant respectfully submits that Gambuzza's transmit block does not perform any digital filtering. The elements that the Examiner has identified as belonging to Gambuzza's transmit block include Figure 4 elements 410, 430A-430C (3/22/2004 Office Action, p. 2). Applicant respectfully submits, however, that these are clearly *analog differential drivers*. Thus even if Gambuzza's transmit block resided within the same integrated circuit package as Gambuzza's receive block and hybrid network, *the portion of Gambuzza's transmit block residing within an integrated circuit package is incapable of performing any type of digital filtering.*

Accordingly, Gambuzza does not teach or disclose *a transmit block, hybrid network, and receive block residing within the same integrated circuit package, wherein the transmit block digitally filters the upstream data signal.*

In contrast, amended claim 1 includes the language:

1. An analog front end apparatus, comprising:

a) *a transmit block coupled to transmit discrete multitone modulated upstream data to a subscriber line, wherein the transmit block digitally filters the upstream data;*

b) *a hybrid network* coupled to the subscriber line and the transmit block; and

c) *a receive block* coupled to the hybrid for receiving discrete multitone modulated downstream data from the subscriber line, *wherein the transmit block, hybrid network, and receive block reside within a same integrated circuit package.*

(Claim 1, as amended)(*emphasis added*)

Thus applicant submits amended claim 1 is not anticipated by Gambuzza. Given that claims 2-6 depend from claim 1, applicant submits claims 2-6 are likewise not anticipated by Gambuzza.

Applicant respectfully submits the rejections under 35 U.S.C. § 102 have been overcome.

Response to 35 U.S.C. § 103 rejections

Claims 2, 3, and 6 were rejected as being unpatentable under 35 U.S.C. § 103 in view of various combinations of Gambuzza and Hjartarson.

Applicant respectfully submits that none of the cited references teaches or suggests *the claimed transmit block, hybrid network, and receive block residing within the same integrated circuit package, wherein the transmit block digitally filters the upstream data signal.*

With respect to Gambuzza, this argument was presented above with respect to the 35 U.S.C. § 102 rejections.

Hjartarson appears to have been cited merely for teaching elements of certain dependent claims. Although such a teaching is insufficient grounds for rejection in view of amended claim 1, applicant is compelled to respond to the Examiner's characterization of Hjartarson.

Hjartarson's figures 6-8 illustrate termination circuitry that provides the appropriate impedances at xDSL frequencies and POTS frequencies such that xDSL and POTS communications can be driven with a common driver. None of figures 6-8 teaches or discloses a hybrid. The hybrid function of distinguishing the driven signal from the received signal carried by the same line must be performed individually within the DSL modem for DSL communications and the POTS codec for POTS communications.

With respect to claims 2, 3, the Examiner has cited Hjartarson as teaching "the hybrid is a first order hybrid network" at col. 7, lines 27-28 and that the "hybrid is tunable" at col. 6, lines 44-59.

Contrary to the Examiner's assertion, applicant respectfully submits that col. 7, lines 27-28 of Hjartarson refers to the order of the *anti-aliasing filters* of the impedance synthesis circuitry *not any hybrid circuitry*. The circuitry of Figures 6-8 does not provide any hybrid function, thus the hybrid function must be performed individually within the blocks identified as the POTS codec and the DSL modem.

Applicant submits that the "receive" signal carried to the POTS codec 406 and the DSL modem 408 comprises the upstream and downstream signals (i.e., both the signal to be received from the loop 404 and the signal being driven onto the loop 404) for both the DSL modem and the POTS codec. Thus the POTS codec is receiving the upstream and downstream signals for both the POTS codec and the DSL modem. Similarly, the DSL modem is receiving the upstream and downstream signals for both the DSL modem and POTS codec. The elements identified by the Examiner are clearly not performing a hybrid function. The

DSL and POTS hybrid functions are presumably incorporated into the POTS codec and the DSL modem, respectively.

The citation identified by the Examiner indicates that the POTS linecard 406 and the xDSL modem 408 have high-order filters as part of the input circuits. If this is in reference to their respective hybrids, then these elements have hybrids of order greater than one. (Hjartarson, col. 7, lines 25-28). Otherwise, applicant respectfully submits that there is no teaching or suggestion of the order of any hybrid disclosed by Hjartarson.

Although col. 6, lines 44-59 discuss the programmability of *the frequency response of a synthesized impedance* of the circuitry of Figure 6, et seq. none of these figures teach or disclose a hybrid. *Thus Hjartarson does not teach or suggest the programmability or tunability of any hybrid.*

Accordingly, applicant respectfully submits that none of the cited references teaches or suggests *a transmit block, hybrid network, and receive block residing within the same integrated circuit package, wherein the transmit block digitally filters the upstream data signal.*

In contrast, amended claim 1 includes the language:

> 1. An analog front end apparatus, comprising:
> a) *a transmit block coupled to transmit discrete multitone modulated upstream data to a subscriber line, wherein the transmit block digitally filters the upstream data;*
> b) *a hybrid network* coupled to the subscriber line and the transmit block; and
> c) *a receive block* coupled to the hybrid for receiving discrete multitone modulated downstream data from the subscriber line, *wherein the transmit block, hybrid network, and receive block reside within a same integrated circuit package.*

(Claim 1, as amended)(*emphasis added*)

Thus applicant submits amended claim 1 is patentable under 35 U.S.C. § 103 in view of the cited references. Given that claims 2-6 depend from claim 1,

applicant submits claims 2-6 are likewise patentable under 35 U.S.C. § 103 in view of the cited references.

Applicant respectfully submits the rejections under 35 U.S.C. § 103 have been overcome.

Conclusion

In view of the arguments and amendments presented above, applicant respectfully submits that the applicable objections and rejections have been overcome. Accordingly, claims 1-10, as amended, should all be found to be in condition for allowance.

If there are any issues that can be resolved through a telephone conference, the Examiner is invited to contact the undersigned at **(512) 858-9910**.

Respectfully submitted,
DAVIS & ASSOCIATES

Date August 23, 2004 William D. Davis

William D. Davis
Reg. No. 38,428

P.O. Box 1093
Dripping Springs, TX 78620
(512) 858-9910